



# THE ROAD FROM COSTA RICA TO THE INTERNATIONAL SPACE STATION

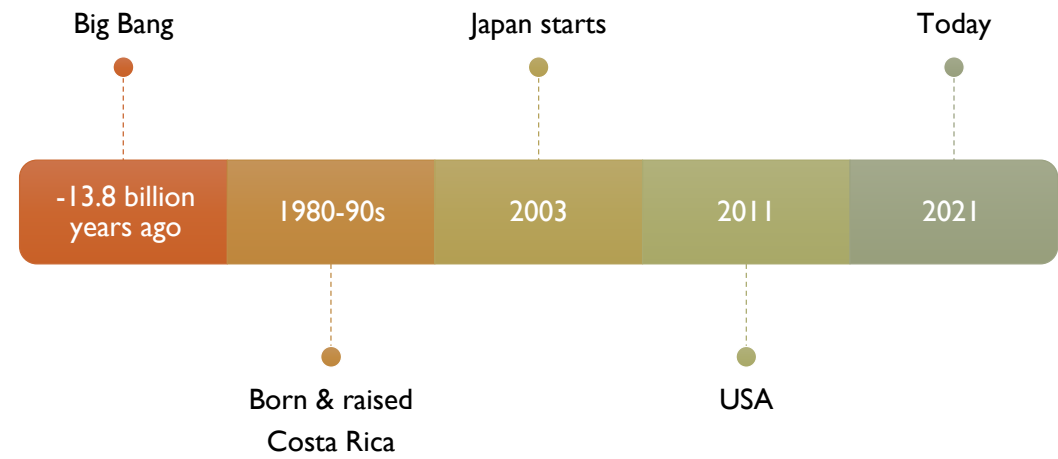
Dr. Andres Mora Vargas

2022-04-08

SHPE

Chandler Gilbert Community College

HI!

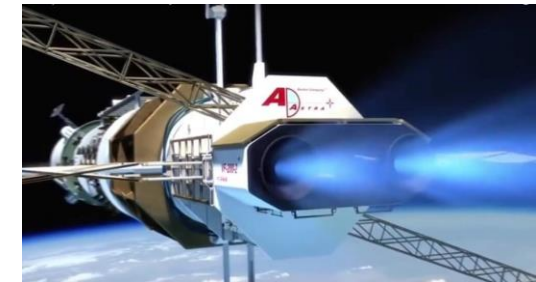


# COSTA RICA

- Born & raised
  - Travelled about every two years somewhere
  - Hard time at the beginning of High school
  - Inspired by Costa Rican-American former NASA astronaut, Franklin Chang-Diaz
  - Did not get accepted 1<sup>st</sup> choice university
- Exchange visit in Houston
  - Met Dr. Chang-Diaz at his Advanced Space Propulsion Laboratory (ASPL), Johnson Space Center, NASA
- Graduated from College and had internship at ASPL.
  - Worked with the VASIMR
  - Met my future mentor, Dr. Alberto Behar
- Returned to Costa Rica
  - Unemployed for several months
  - Applied for Japanese scholarship
  - Worked in payroll and construction
  - Started M.Sc. Electrical Engineering at University of Costa Rica



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Ad Astra Rocket Co

# JAPAN

- New life
  - Cultural shock
  - Language
  - Friends
- Entrance exam(s)
  - One or two visits to the ER
- Research (Work) / Life
  - Master, PhD.
  - International Space University
  - Europe, China, Australia, USA
- Advanced Telecommunications Research Institute International (ATR)
  - Dr. Hirose Ishiguro
- Career opportunity
  - Took leap of faith



CC



Space Robotics Laboratory



TOHOKU  
UNIVERSITY  
Tohoku University



International Space University



CC



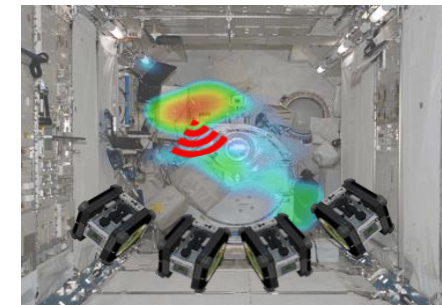
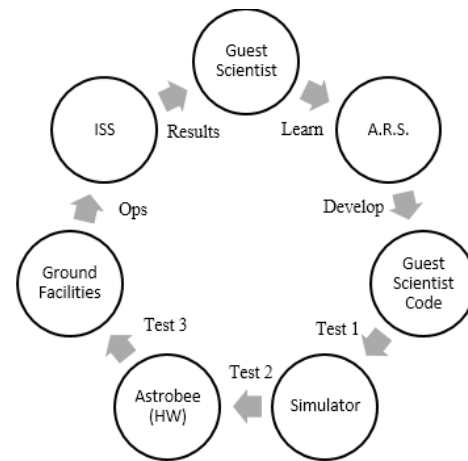
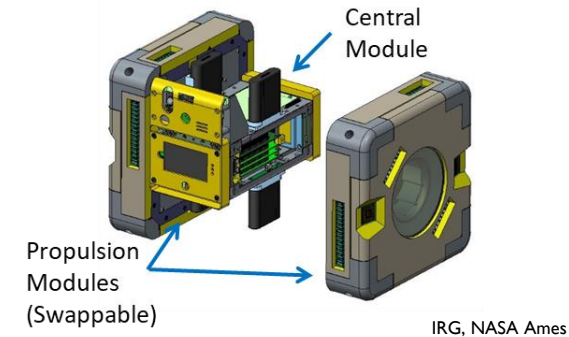
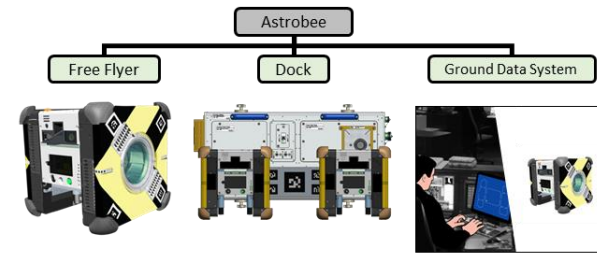
USA

- ASU
  - Only six month contract
  - Awarded two proposals
  - First patent
- Unemployment...
- NASA Ames
  - Underground autonomous system
  - Astrobee
  - BioSentinel



# ASTROBEE

- [Astrobee](#) research platform ecosystem
  - Astrobee hardware: Ground and flight units
  - Ames Research Center Experimental Facilities
  - Astrobee Robot Software
  - Access to the International Space Station
- Support different research: AI, manipulation, computer vision, HRI, many, many other fields!



Isolating faults: Ultrasonic leak detection



Off-load routine astronaut tasks: Robotic cargo transfer

# TEAM WORK

- How can we operate a robot over 400km away?
- [Chris Cassidy meets Astrobees](#)
- Deadlines, technical issues, different timezones and working cultures, and excited students!
- [JAXA's Kibo Robotic Programming Challenge](#)



NASA



NASA



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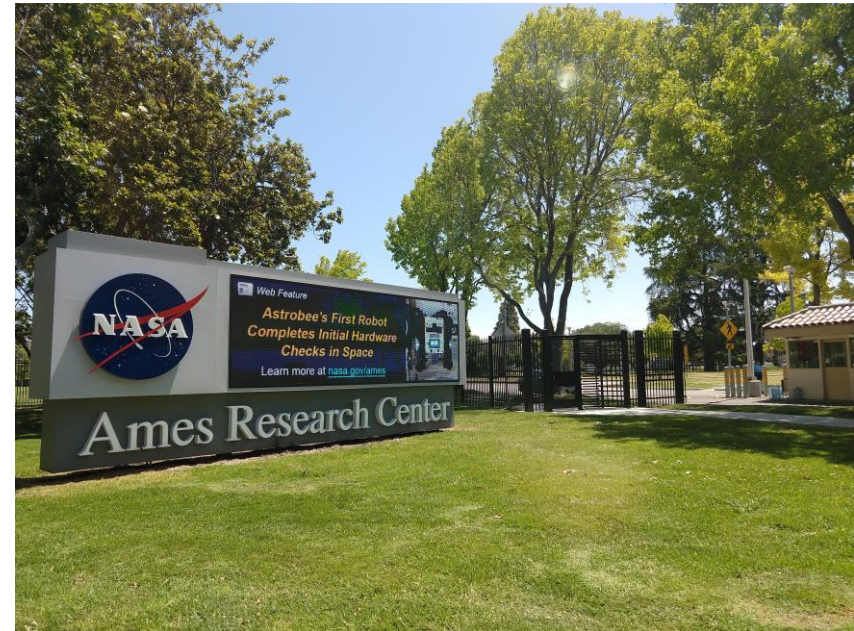
# GROWING CIRCLE





PURA VIDA!

#TogetherWereBetter



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